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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,663	06/23/2005	Gary Wayne Yewdall	YEW0101PUSA	2899
22045	7590	02/02/2010	EXAMINER	
BROOKS KUSHMAN P.C. 1000 TOWN CENTER TWENTY-SECOND FLOOR SOUTHFIELD, MI 48075			FOX, JOHN C	
			ART UNIT	PAPER NUMBER
			3753	
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/540,663	Applicant(s) YEWDALL ET AL.	
	Examiner John Fox	Art Unit 3753	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 January 2010.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5, 7-9 and 15 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 7-9 and 15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 January 2010 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on January 14, 2010 has been entered.

The drawings are objected to because notch 11 is not adequately supported in the original drawings and disclosure. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Applicant's arguments filed January 14, 2010 have been fully considered but they are not persuasive. The structure shown as notch 11 in the proposed Figure 2 is simply not present in the original application. The magnified views of Figures 1 and 2 submitted do not appear the same when the Examiner zooms in on the original drawings, and the cited original disclosure plainly fails to disclose the notch 11 shown in the proposed drawing.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 1-5, 7-9, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Miyamoto et al (US 5,520,001), of record.

Miyamoto et al show a diaphragm valve with inlet connector 13 attached to an integral upstream connector, outlet connector 14 attached to an integral downstream connector, an upstream void 4, a downstream void 5, a sealing face 9 at the top of portion 15, and a diaphragm 23. Heater 2 on the right side of Figure 1 will inherently heat the downstream void. The cavities 8 and 10, and the cavity holding sensor 3 on the left, will inherently reduce heating of the upstream connector by the rightmost heater 2. Actuator 31 may be used to shutoff or to modulate flow through the valve. Heater 2 is read as having some axial extent and as being capable of raising the temperature to whatever temperature is desired, such as 100° C. Heater 2 will inherently reduce surface tension and increase evaporation.

Applicant's arguments filed January 14, 2010 have been fully considered but they are not persuasive.

The Examiner disagrees with Applicant's contentions regarding the scope of the amended claims. The adjectival recitation of "liquid" is not a positive recitation of an exclusively liquid flow and does not exclude a gas in the fluid stream. Miyamoto et al discloses a valve which has a liquid component to the inlet flow and which reasonably has a liquid component to the outlet flow, in view of the disclosure of only a partially successful effort to vaporize all of the liquid inflow ("a liquid material to be vaporized as far as possible" , see the abstract) and the liquid drains in some embodiments.

Applicant argues that the Examiner relies on joints 13, 14 for the claimed connectors. In fact, the rejection of October 14, 2009 states "Miyamoto et al show a diaphragm valve with inlet connector 13 attached to an integral upstream connector, outlet connector 14 attached to an integral downstream connector", which properly identifies the integral connectors that anticipate the cited claim language. To use the language of the argument, joints 13, 14 are connected to the integral connectors.

Applicant argues that the heater 2 will heat the whole block 1a so the claim limitation of "locally heat" is patentable. The Examiner disagrees. It is axiomatic that a heater will heat the local area adjacent thereto. Nothing in the claims precludes the heater from heating an area greater than the local area, and Miyamoto et al fairly anticipates the cited limitation.

Applicant argues that amended claim 4, which is the same as original claim 4, is not met by Miyamoto et al. However, Miyamoto et al shows a sharp angle between passages 4 and 8 which can reasonably be read as "a small discontinuity to break

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surface tension" in that it is a discontinuity and will inherently break surface tension. The claim does not call out a notch.

Applicant's arguments for claim 7 which are the same as for claim 1 are addressed above. Applicant argues that the recitation of "between" distinguishes over Miyamoto et al. The Examiner disagrees. Moving from the left to the right in Figure 1, the heater 2 is encountered before the outlet connector and thus can reasonably be described as between the port 4 and the integral connector.

Applicant argues that cavities 8 and 10, and the cavity holding sensor 3, will not limit heat conduction between the rightmost heater 2 and the upstream connector. The Examiner disagrees. Compared to a solid metal body, the cited cavities will inherently conduct heat less efficiently. Therefore the rejection is still seen to be proper.

Claims 1-5, 7-9, and 15 are, in the alternative, rejected under 35 U.S.C. 103(a) as being unpatentable over Miyamoto et al in view of Nagano (US 6,006,701), of record.

Miyamoto et al show the claimed device except, arguably, an extended heater element. Nagano shows a typical heater element H with a longitudinally extended heater. It would have been obvious at the time the invention was made for one of ordinary skill in the art to have used such an extended heater as taught by Nagano for the heater 2 of Miyamoto et al under the rationale set forth in *KSR v. Teleflex*, 550 U.S. ___, 127 S. Ct. 1727, 82 U.S.P.Q. 2d 1835 (2007) that the simple substitution of one known element for another to obtain predictable results is obvious.

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The provision of heating to at least 100° C is considered an obvious matter of design choice, as is the conclusionary recitations of the heater reducing the surface tension of the fluid or improving the evaporation of the fluid of the references.

Applicant's arguments have been fully considered but they are not persuasive.

Applicant argues that Nagano fails to cure the supposed deficiencies of Miyamoto et al. However, Nagano was applied only as teaching a heater with an elongated shape. Since the rejection under Miyamoto et al has been shown to be proper, this rejection is still considered proper as well.

All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.129(a) and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.129(a). Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the submission under 37 CFR 1.129(a). See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Fox whose telephone number is 571-272-4912. The examiner can normally be reached on Monday-Saturday from 10am-6pm (Hoteling Program).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on 571-272-4777. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/John Fox/
Primary Examiner
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